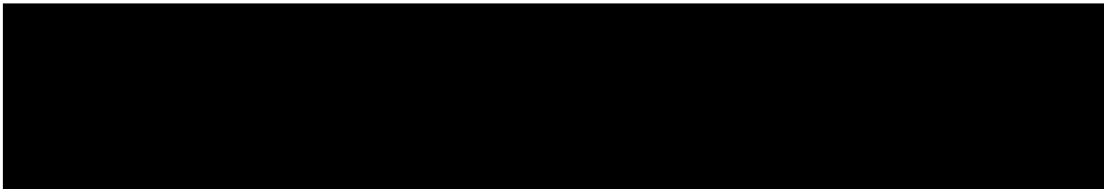


Drainage Maintenance Schedule Salt Box Site

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Revision History

Rev:	Description:	Date:	Rev by:	Chk by:
P1	First Issue	26/02/2019	KN	DO
P2	Petrol Interceptor included	06/06/2019	KN	DO
		Add date		
		Add date		

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1. Introduction

- 1.1** This maintenance schedule has been prepared by Kirksaunders Associates (KSA) to support the proposed drainage strategy for the development of Salt Box Site Development.
- 1.2** This long-term Drainage Operations and Maintenance (O&M) Plan shall be implemented at the new commercial and industrial development to ensure that the surface water management system functions as designed. This Operations and Maintenance Plan is intended to cover all on-site drainage structures. The Property Owner possesses the primary responsibility for overseeing and implementing the O&M Plan and designating a person who will be responsible for the proper operation and maintenance of the surface water structures. In case of transfer of property ownership, future property owners shall be notified of the presence of the surface water management system and the requirements for proper implementation of the O&M Plan.
- 1.3** Contact Information for design engineer:
Kirksaunders Associates
Templegate House 115-123 High St, Orpington, Kent, BR6 0LG
Tel: 01689 896 464

2. Drainage Design

- 2.1** The surface water management system protects and enhances the surface water runoff water quality through the removal of sediment and pollutants, and source control significantly reduces the amount of pollutants entering the system.
- 2.2** The car parking areas and loading are the primary source of contamination due to the risk of spillages of fuels and oils, due to the area affected by traffic, the risk of contamination is regular. A petrol interceptor has however been proposed to control the risk of contamination prior to discharge off-site in the vehicle loading and parking area
- 2.3** The surface water from the site is proposed to be restricted to green field flows to adhere to the larger strategic surface water management system.
- 2.4** Surface water control measures have been incorporated as part of this drainage strategy through ponds, basins and flow-controlled discharge rates.

3. Maintenance Program

- 3.1** The Property Manager and maintenance staff will conduct the operation and maintenance program set forth in this document. The Manager will ensure that inspections and record keeping are timely and accurate and that cleaning and maintenance are performed at least on a bi-annual basis. Inspection & Maintenance Log Forms (attached) shall include the date and the amount of the last significant storm event in excess of 1" of rain in a 24-hour period, physical conditions of the structures, depth of sediment in structures, evidence of overtopping or debris blockage and maintenance required of each structure. Records of maintenance will be kept on file at the Property Manager's office and copies of Inspection & Maintenance Log sheets indicating all work and inspections will be available to the Local Authority or engineers upon request.
- 3.2** All surface water management structures will be inspected two times per year, with cleaning typically occurring in April and October and possibly more often, as site conditions warrant. Concurrent with inspection and cleaning, all litter shall be picked up and removed from the parking areas, service areas, grass, landscaped and wooded areas.
- 3.3** Long-term management practices include monthly sweeping of parking areas. The sweeping program will remove sand and contaminants directly from paved surfaces before they become mobilized during rain events and transported to the drainage system. Pavement sweeping is a highly effective source control measure for reducing pollutant loading in surface water. A regenerative air type street sweeper will be utilized to sweep site parking areas. All sweepings will be disposed of in a legal manner.
- 3.4** Ensure that drainage structures are not blocked by ice, snow, debris or trash during winter months.

Quarterly Inspections

- 3.5** Inspect catch basin inlet grates and remove any debris monthly or as determined to be reasonable based on experience with the installed systems to ensure that the catch basins are working in their intended fashion and that they are free of debris; quarterly, inspect catch basin sumps and bottom of drain manholes; if depth of sediment in sumps exceeds 50% capacity, sediment must be removed. Excessive sediment shall be removed and properly disposed by a licensed drainage cleaning company.

Bi-Annual Inspections (April and October)

- 3.6** Inspect sediment depth near discharge pipes once per year or more frequently if depth of sediment exceeds $\frac{1}{4}$ of pipe diameter.
- 3.7** Accumulated sediment must be removed if the depth of sediment exceeds $\frac{1}{4}$ of pipe diameter during inspection. Excessive sediment shall be removed and properly disposed by a licensed drainage cleaning company.
- 3.8** Inspect water quality units and ponds. Accumulated sediment must be removed if depth of sediment exceeds 15% of the unit's storage capacity during either of the bi-annual inspections and at least once per year; 3. Inspect constructed surface water wetlands and remove wind-blown trash and debris. Inspect vegetation twice per year during both the growing and non-growing seasons. Remove accumulated sediment once every ten years or more often as necessary.
- 3.9** Inspect all vegetated areas and remove litter and debris as necessary. Inspect slopes and embankments early in the growing season to identify active or potential erosion problems. Replant bare areas or areas with sparse growth. Where rill erosion is evident, armor the area with an appropriate lining or divert the erosive flows to on-site areas able to withstand the concentrated flows.
- 3.10** Inspection of trash and recycling enclosures for spillage and scattered litter must be performed on a regular basis to prevent the spread of pollutants into the surface water management system.
- 3.11** It is highly recommended that the manufacturer recommended maintenance inspection is carried out for the pond, basin and permeable paving system.

4. Schedule

- 4.1** The following is a general maintenance schedule that can be used as a reference by the Property Manager. This schedule includes the maintenance action to be taken and when the action is to occur.

Site Component	Action to be Taken	Timeline for Completion
Manholes/ Gullies/ Channels	Monthly inspections with Quarterly cleaning, removal of sediments, oils, and floatables	Monthly Inspection, Quarterly Cleaning
Water Quality Units and ponds	Cleaning, removal of sediments, oils, and floatables	April & October
Pavement Areas	Sweeping of paved areas, disposal of sweeping in a legal manner; removal of trash and litter from pavement.	Monthly
Below Ground Attenuation tanks	Inspect in accordance to manufacturers recommendations	April & October
Full retention separator complete with alarm	Inspect in accordance to manufacturers recommendations	As required by the manufacturers recommendations

- 4.2** It is strictly prohibited to discharge any products or substances onto the ground surface or into any drainage structures, such as catch basin inlets, manholes, water quality units, fore bays, basin or drainage outlets.
- 4.3** Should a spill occur, immediate action steps must be implemented to contain the spill, cordon off the area, clean it up immediately and dispose of it properly to prevent an illicit discharge to the surface water management system.